## WHAT IS CLAIMED IS:

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1. A method of creating VOBU in HD-DVD systems, comprising following steps:

- a. gain HD-enh data streams and SD video data streams by dividing original HD video data streams;
- b. all kinds of data streams including HD-enh video data streams, SD video data streams, and audio data streams are packed to HD-enh video data packet (V\_PCK\_HD), video data packet (V\_PCK), and audio data packet (A\_PCK) respectively to compose a series of VOBUs.
- 2. The method of claim 1, further comprising a step of writing the data in the VOBU into an optical disc in turn to create a HD-DVD disc.
- 3. The method of claim 1, further comprising a step of creating mapping file by a series of VOBUs to make HD\_DVD disc.
- 4. The method of claim 2 or claim 3, wherein said V\_PCK\_HD data packet and related V\_PCK data packet are sequenced adjacently in the same VOBU.
- 5. The method of claim 1, wherein said V\_PCK\_HD data packet and said V\_PCK data packet can share the same A\_PCK data packet in the VOBU.
  - 6. The method of claim 1, wherein the HD-enh video data streams are packed to V\_PCK\_HD packet according to the defined structure of the V\_PCK\_HD data packet in said step b.
- 7. The method of claim 6, wherein the structure of the V\_PCK\_HD data packet is defined with a reserved Stream\_ID, namely the identification mark of the stream, in

MPEG standards.

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8. The method of claim 6, wherein the HD-enh video data is put into the private stream, and the structure of the V\_PCK\_HD data packet is defined with a reserved or provider defined Sub\_Stream\_ID, namely the identification mark of the sub-stream.

- 9. A kind of HD-DVD disc, wherein said disc contains V\_PCK\_HD data packet and V\_PCK data packet.
- 10. The HD-DVD disc of claim 9, wherein said V\_PCK\_HD data packet and related V\_PCK data packet are sequenced adjacently in the HD-DVD disc.
- 11. Means for creating VOBU in HD-DVD systems, comprising:

a segregating unit, used to divide original HD video data streams into HD-enh data streams and SD video data streams;

a multiplexer, used to pack all kinds of input data streams including HD-enh video data streams, SD video data streams, audio data streams into HD-enh video data packet (V\_PCK\_HD), video data packet (V\_PCK), audio data packet (A\_PCK) respectively composing a series of VOBUs; and the said segregating unit is joined with the multiplexer.

12. The means of claim 11, wherein said segregating unit comprises:

Means for resolution downgrade, used to downgrade the resolution of the input original HD video data streams;

SD encoder, used to encode the input data streams which have been

resolution-downgraded to gain SD video data streams, and transmit the SD video data streams to the multiplexer;

Decoder, used to decode the input SD video data streams:

Means for resolution upgrade, used to upgrade the resolution of the input decoded SD video data streams:

A differential means, used to perform differential process on the input data streams which have been resolution-upgraded and the input original HD video data streams;

HD-enh encoder, used to encode the data streams which have been differentiated to gain HD-enh video data streams, and transmit the HD-enh video data streams to the multiplexer.

- 13. The means of claim 11 or claim 12, wherein said multiplexer is the multiplexer which accords with DVD standards.
- 14. Means for playing HD-DVD disc, comprising:

optical wave picker, used to deal with the input VOBU data streams in the HD-DVD disc to gain V\_PCK\_HD data packet and V\_PCK data packet;

HD-DVD decoder, used to respectively decode the V\_PCK\_HD data packet and V\_PCK data packet to gain HD-enh video data streams and SD video data streams;

means for resolution upgrade, used to upgrade the resolution of the input SD video data streams;

means for overlapping, used to overlap the input SD video data streams which have been resolution upgraded with the input HD-enh video data streams to gain the output of the high definition TV.

15. The means of claim 14, wherein said HD-DVD decoder contains a V\_PCK\_HD buffer, a V\_PCK buffer, a HD-enh decoder and a SD decoder, said V\_PCK\_HD buffer and the HD-enh decoder process the V\_PCK\_HD packet in turn to gain HD-enh video data streams, said V\_PCK buffer and SD decoder deal with the V\_PCK packet in turn to gain SD video data streams.